

Biodiversity Net Gain Design

Stage Report

Warmstone House



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Client

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Contents

Summary	3
Introduction	4
Methodology	7
Baseline Conditions	9
BNG Good Practice Principles for Development	10
Proposed Design	12
BNG Metric	14
Project Implementation and Construction Plan	15
Biodiversity Net Gain Management and Monitoring Plan	15

Summary

The project proposals for Warmstone House include the part conversion of the roof void to a new bedroom, alterations to an existing single-storey side extension, construction of a single-storey dining room extension, car parking area extension and adding a greenhouse and ornamental pond to the vegetable garden area.

The development area does not include any irreplaceable habitats that could be affected by the project proposal and overall long-term biodiversity will be improved by more than 10% for habitats and hedgerows by the planting of traditional orchard trees and an addition of a section ornamental hedgerow between the building and the new car park area.

A separate great crested newt district licence application is being progressed with nature space for the works as the property is close to woodland with breeding great crested newt ponds, no disturbance to the ponds will arise because of the project proposals. Terrestrial habitats being disturbed or removed by the development have low suitability as terrestrial resting places for amphibians.

Introduction

Commissioning client, site name and purpose of report

The project proposal at Warmstone House is being delivered for the clients, Mr E and Mrs V Darby by Johnston Cave Associates.

Background to project and proposed project description

The project proposal includes the part conversion of the roof void to a new bedroom, alterations to an existing single-storey side extension, construction of a single-storey dining room extension, small car parking area extension, and adding a greenhouse and ornamental pond to the vegetable garden area.

Brief project site description, including baseline land use

Bernwood Ecology were appointed to undertake a Preliminary Ecological Appraisal and Preliminary Roost Assessment (supported with a data search for historical species and site records) of Warmstone House at Waddesdon. The phase 1 habitat map is included in Appendix 5 of the Preliminary Ecological Appraisal and Preliminary Roost Assessment for Bats by Bernwood Ecology dated 03/11/2023 and submitted as part of the planning application.

The habitats on site offer negligible (hardstanding, bare ground) to low (introduced shrub, amenity grassland, hedgerow) ecological value. The exceptions to this are the traditional orchard and scattered trees, which offer high ecological value, and are understood to be retained and protected under the proposals.

Great crested newts are known to be present in the local area, and there is the potential of injury to individuals in the absence of mitigation. Enrolment into the local district-level Licencing is being progressed.

A brown long-eared bat roost is present in the main loft void of the house; the loft void over the southeastern extension has 'Low' potential to support bat roosts due to the low number of potential bat access points found.

Following completion of these reports TwoWheelsEcology were appointed to complete the great crested newt district licence application, the biodiversity net gain calculation and reporting and the bat activity surveys.

Three emergence/ re-entry bat surveys of the house and one emergence survey of the extension were completed to provide further information on bat activity at the property. The results of these surveys, along with recommendations were details in the Warmstone House Bat Activity Report 230918, also submitted along with the planning application.

Planning status of project, certainty of design and assumptions made

The project proposals will be submitted for planning approval, along with the reports mentioned above and planning drawings for approval.

Aims, Objectives, Scope of Study

This report is being prepared to accompany the Biodiversity Net Gain Metric 4.0 calculation for the impact of the project proposal at the site.

Relevant Policy & Legislation (from the Preliminary Ecological Appraisal and Preliminary Roost Assessment for Bats by Bernwood Ecology dated 03/11/2023).

National

The local planning authority has the power to request information under Article 4 of the Town and Country (Planning Applications) Regulations 1988 (SI1988.1812) (S3) which covers general information for full applications.

The National Planning Policy Framework (NPPF) revised in 2021 requires the planning system and policies to balance economic, social and environmental factors of sustainable development. The environmental component of the NPPF states that any planning application must: 'contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy'. Chapter 15 (Conserving and Protecting the Natural Environment) includes the methods by which this is to be achieved, including:

- protecting and enhancing valued landscapes, sites of biodiversity or geological value;
- recognising the intrinsic character and beauty of the countryside; and,
- minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.

Planning permission should be refused if: significant harm from a development cannot be adequately avoided, adequately mitigated, or as a last resort compensated for. The presumption in favour of development does not apply where development requiring appropriate assessment under the Habitats Directive is being considered, planned or determined. Planning policies and decisions should limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscape and nature conservation. Please see updated Planning Practice Guidance <https://www.gov.uk/government/speeches/local-planning>.

Section 99 of ODPM Circular 06/2005 states: 'It is essential that the presence or otherwise of protected species, and the extent that they may be affected by the proposed development, is established before the planning permission is granted, otherwise all relevant material considerations may not have been addressed in making the decision. The need to ensure ecological surveys are carried out should therefore only be left to coverage under planning conditions in exceptional circumstances, with the result that the surveys are carried out after planning permission has been granted. However, bearing in mind the delay and cost that may be involved, developers should not be required to undertake surveys for protected species unless there is a reasonable likelihood of the species being present and affected by development. Where this is the case, the survey should be completed and any necessary measures to protect the species should be in place, through conditions and/ or planning obligations, before permission is granted'.

Local

Local authorities have a duty to consider the three derogation 'tests' of the Habitats Directive: no satisfactory alternative, imperative reasons of overriding public interest (including those of a social or economic nature or beneficial consequences for the environment) and that the favourable conservation status of the species will be maintained. If any of these requirements are not met, the local authority should refuse planning permission regardless of any commitment to obtain a Natural England licence.

The Vale of Aylesbury Local Plan (VALP) 2013-2033 (adopted in 2021) includes Policies NE1, NE2, and NE8, detailing strategies concerning biodiversity and geodiversity, watercourses as well as trees, hedgerows and woodlands, respectively.

Policy NE1 sets out the strategies for protecting and enhancing biodiversity and geodiversity through measures including:

- seeking net gains in major and minor developments;
- refusing permission where significant detriment (including to sites of principal importance such as Priority Habitats) cannot be avoided, mitigated or compensated;
- requiring that mitigation for Priority Habitats be delivered on site and,
- promoting site permeability for wildlife by maintaining existing corridors and ensuring continued and enhanced habitat connectivity in new developments.

Policy NE2 relates to protecting watercourses and their associated corridors. The policy states that developments should conserve and enhance the biodiversity value of the watercourse and its corridor through good design... Opportunities for de-culverting of watercourses should be actively pursued and planning permission will only be granted for proposals which do not involve the culverting of watercourses. Development proposals adjacent to or containing a watercourse must provide or retain a 10m ecological buffer (unless existing physical constraints prevent) between any watercourse and the development. There must also be a long-term landscape and ecological management plan for this buffer.

Policy NE8 aims to protect the trees, hedgerows and woodlands of Aylesbury Vale, requiring full tree surveys and AIAs as part of planning applications, and adequately sympathetic replacement planting of any justified losses.

Methodology

Desk Study

The following methods were detailed in Section 4 from the Preliminary Ecological Appraisal and Preliminary Roost Assessment for Bats by Bernwood Ecology dated 03/11/2023.

A 1km search for designated sites and historical species records was commissioned from Buckinghamshire and Milton Keynes Environmental Records Centre (BMERC).

A search of MAGIC Map (magic.defra.gov.uk) for statutory sites, European Protected Species Licenses (EPSLs), great crested newt environmental DNA (eDNA) results for pond surveys undertaken by DEFRA 2017-2019, great crested newt survey class licence returns, and priority habitats within 1km was undertaken by Bernwood Ecology. It should be noted that the MAGIC database was last updated in February 2022, therefore licences granted after that time will not yet be uploaded into the database.

Ponds within 500m of the survey boundary were identified through their visibility on maps (at a 1:3000 scale).

Preliminary Ecological Appraisal

The purpose of the PEA is to establish the presence or potential presence of protected species and habitats on or near the site (zones of influence), and specifically:

- identify likely ecological constraints associated with the proposals;
- identify any mitigation measures likely to be required, following the 'mitigation hierarchy';
- identify any additional surveys which may be required to inform a full ecological assessment; and,
- identify opportunities offered by a project to deliver ecological enhancements (CIEEM, 2017).

Habitats on site are assessed and mapped following the JNCC Phase I Habitat Survey methodology (JNCC, 2010). The survey was undertaken by E. Dickins MSc. MCIEEM and S. Sanchez, MSc. CIEEM Qualifying Member on 23rd January 2023, adhering to good practice guidelines and industry standard (BSI, 2013; CIEEM, 2021). The Dominant, Abundant, Frequent, Occasional and Rare (DAFOR) scale is applied to quantify the species assemblages seen on site.

Weather at the time of the survey was sunny, still and icy, with temperatures around -2°C (overnight temperatures reaching -4°C).

Preliminary Roost Assessment

The objective of the PRA is to undertake a daytime inspection of the structure to assess whether there are actual or potential bat roosts present by searching for evidence of bat use and assessing the suitability of the structure to support bat roosts. If evidence of bats is found, the assessment searches for evidence to indicate:

- which species are present;
- an indicative roost size;
- roost access point(s);

- the roost type(s); and,
- whether further survey effort is required in relation to the proposals.

The PRA was carried out by E. Dickins (bat survey class licence levels 3 & 4 surveyor: 2016-27135-CLS-CLS/ 2016-27136-CLS-CLS) and S. Sanchez on 23rd January 2023 following the Bat Conservation Trust (BCT) Good Practice Guidelines (Collins, 2016). The house was systematically searched internally and externally (from the ground) for evidence indicating the presence of bats (live and dead bats, staining at potential roost entry points, feeding remains, droppings and urine marks) and assessed for suitability to support bat roosts through the identification of potential roosting features and potential bat access points.

Equipment available for use during the PRA included ladders, high-powered torches, binoculars, endoscope, digital camera, and sample jars (for collecting droppings for subsequent DNA analysis if required).

Baseline Conditions

The Preliminary Ecological Appraisal and Preliminary Roost Assessment for Bats completed by Bernwood Ecology (03/11/2023) describes the baseline conditions.

The site is set in a rural landscape southeast of the village of Waddesdon of approximately 0.45ha in size, and primarily consists of a house and gardens, with associated access drive and car park. There are agricultural fields to the east and south, a large National Trust visitors' car park for Waddesdon Estate to the west, and low-density housing to the north. The nearest linear water feature is a drain with running water, located approximately 10m away and linking to the ponds south of the site. Areas of plantation woodland including hedgerows line Warmstone Lane.

The habitats on site offer negligible (hardstanding, bare ground) to low (introduced shrub, amenity grassland, hedgerow) ecological value. The exceptions to this are the traditional orchard and scattered trees, which offer high ecological value, and are understood to be retained and protected under the proposals.

There are no designated sites within 1km of the site.

Magic Map identified two types of priority habitats within 1km:

- 28 areas of deciduous woodland, the nearest of which was ~500m from site; and,
- one area of wood-pasture and parkland ~700m from site.

Magic Map found the two great crested newt survey class licence returns confirming species presence; 600m north from site (2016); and 850m northeast from site (2016). There are further ponds without records of great crested newts within 250m of Warmstone House.

The Phase 1 Habitat map included as Appendix 5 (page 31) of the Preliminary Ecological Appraisal and Preliminary Roost Assessment for Bats completed by Bernwood Ecology (03/11/2023) and is attached below for convenience.



Image 1 Phase 1 Habitat map; the Preliminary Ecological Appraisal and Preliminary Roost Assessment for Bats completed by Bernwood Ecology (03/11/2023)

The baseline Habitat Units by habitat type were calculated as follows:

	Units	Area (h)
Urban Developed land; sealed surface	0.00	0.1009
Urban Vegetated Garden	0.00	0.0012
Urban Bare ground	0.01	0.0021
Urban Introduced shrub	0.02	0.0120
Grassland Modified grassland	0.68	0.2367
Grassland Traditional orchard	0.22	0.0551
Total	1.65	0.4080

The condition assessments were left at default metric conditions.

The baseline Hedgerow Units were calculated as follows:

	Units	Length (km)
Non native and ornamental hedgerow	0.08	0.075
Total	0.08	0.075

The condition assessments were left at default metric conditions.

BNG Good Practice Principles for Development

Principle 1. Apply the Mitigation Hierarchy

The project proposals have followed the mitigation hierarchy seeking avoidance, minimisation where possible, restoration of areas within the development and offsets either onsite or offsite; in order to reduce the impacts of development and control any negative effects on the local environment.

Principle 2. Avoid losing biodiversity that cannot be offset by gains elsewhere

The project proposal has avoided any impact on the existing traditional orchard, scattered trees and mature plantation woodland. No irreplaceable habitats are affected by the project proposal.

Principle 3. Be inclusive and equitable

For project proposals of the scale of the development this consultation will be part of the planning consultation process.

Principle 4. Address risk

The project proposal and overall long-term biodiversity will be improved by more than 10% for habitats and hedgerows by the planting of traditional orchard trees and an addition of a section ornamental hedgerow. Reviews at 12 months and 5 years after the completion of the works should be used to inspect the orchard and replace any failed trees.

Principle 5. Make a measurable Net Gain

The Biodiversity Net Gain has been calculated using the latest DEFRA metric and submitted as part of this report. Condition assessments habitats were left at the default setting under the metric.

Principle 6. Achieve the best outcomes for biodiversity

The selection of traditional orchard habitat creation is formally identified in the local biodiversity plan as a target for Buckinghamshire. It is referred to as priority habitat within the Buckinghamshire Biodiversity Action Plan “Forward to 2030”.

Principle 7. Be additional

The conservation gains anticipated by project activities and would not have occurred in other circumstances.

Principle 8. Create a Net Gain legacy

Those responsible for implementing project biodiversity management have the requisite management and technical capacity for their specified roles to deliver the agreed conservation outcomes and monitoring is in place to identify risks to achieving specified outcomes.

Principle 9. Optimise sustainability

The selection of traditional orchard habitat creation is formally identified in the local biodiversity plan as a target for Buckinghamshire, but will have a wider impact on the environment, the community and the economy.

Principle 10. Be transparent

The commitment to Biodiversity Net Gain will be stated in the planning documentation. by the project developer in a publicly available document.

Proposed Design

The project proposal fully compensates for the loss of habitat units and provides an increase in excess of 10% for habitat units and hedgerow units. The following results are taken from the DEFRA metric at 2 decimal places.

	Base Case	Post Development	Increase no.	Increase %
Habitat Units	1.65	1.81	0.17	10.08%
Hedgerow Units	0.08	0.09	0.01	10.29%

The project is illustrated by Image 2 below.



Image 2 Project Proposal for development at Warmstone House

The project proposal includes the increase to onsite habitats of traditional orchard (502m² UK Hab Grassland Traditional Orchard) and vegetated garden (98m² UK Hab Urban Vegetated Garden). This compensates for the development work which include additional areas for building extensions (30m² Urban Developed Land; Sealed Surface) and hard standing (484m² Urban Developed Land; Sealed Surface) and reduction in amenity grassland (Grassland Modified Grassland 1,126m²).

Image 3 identifies the areas of habitat that have been created as part of the project proposal mentioned above. The only habitat that has reduced is amenity grassland as mentioned above.

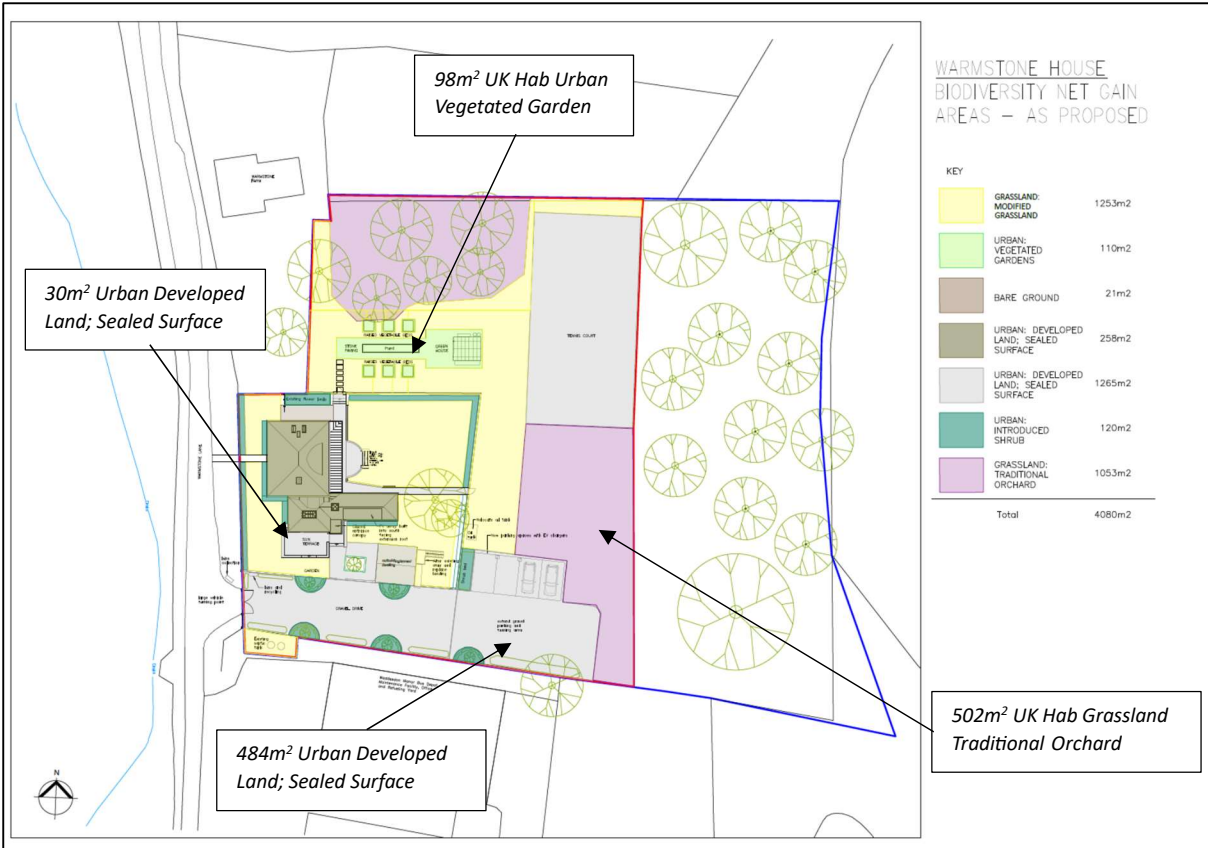


Image 3 Project Proposal habitat creation

BNG Metric

The metric spreadsheet has been provided as an attachment to this report.

The project proposal at an early stage avoided any impact on the established traditional orchard and scattered trees and the impact of the development on habitat was restricted to the short sward amenity grassland. There was an opportunity during the design stage to include a new area to create more traditional orchard habitat; a *priority habitat within the Buckinghamshire Biodiversity Action Plan "Forward to 2030"*.

The distinctiveness of the habitats created is consistent with the current onsite base case habitat and the condition of the habitats are consistent with model default values.

Headline Results		Return to results menu			
Scroll down for final results ▲					
On-site baseline	Habitat units	1.65			
	Hedgerow units	0.08			
	Watercourse units	0.00			
On-site post-intervention <small>(Including habitat retention, creation & enhancement)</small>	Habitat units	1.81			
	Hedgerow units	0.08			
	Watercourse units	0.00			
On-site net change <small>(units & percentage)</small>	Habitat units	0.17	10.08%		
	Hedgerow units	0.01	10.29%		
	Watercourse units	0.00	0.00%		
Off-site baseline	Habitat units	0.00			
	Hedgerow units	0.00			
	Watercourse units	0.00			
Off-site post-intervention <small>(Including habitat retention, creation & enhancement)</small>	Habitat units	0.00			
	Hedgerow units	0.00			
	Watercourse units	0.00			
Off-site net change <small>(units & percentage)</small>	Habitat units	0.00	0.00%		
	Hedgerow units	0.00	0.00%		
	Watercourse units	0.00	0.00%		
Combined net unit change <small>(Including all on-site & off-site habitat retention, creation & enhancement)</small>	Habitat units	0.17			
	Hedgerow units	0.01			
	Watercourse units	0.00			
Spatial risk multiplier (SRM) deductions	Habitat units	0.00			
	Hedgerow units	0.00			
	Watercourse units	0.00			
FINAL RESULTS					
Total net unit change <small>(Including all on-site & off-site habitat retention, creation & enhancement)</small>	Habitat units	0.17			
	Hedgerow units	0.01			
	Watercourse units	0.00			
Total net % change <small>(Including all on-site & off-site habitat retention, creation & enhancement)</small>	Habitat units	10.08%			
	Hedgerow units	10.29%			
	Watercourse units	0.00%			
Trading rules satisfied?	Yes ✓				
Unit Type	Target	Baseline Units	Units Required	Unit Deficit	
Habitat units	10.00%	1.65	1.81	0.00	Unit requirement met or surpassed ✓
Hedgerow units	10.00%	0.08	0.08	0.00	Unit requirement met or surpassed ✓
Watercourse units	10.00%	0.00	0.00	0.00	Unit requirement met or surpassed ✓

Image 4 Headline results from DEFRA Metric for Warmstone House

The post development Habitat Units by habitat type were calculated as follows:

	Units	Area (h)
Urban Developed land; sealed surface	0.00	0.1523
Urban Vegetated Garden	0.02	0.0110
Urban Bare ground	0.01	0.0021
Urban Introduced shrub	0.02	0.0120
Grassland Modified grassland	0.25	0.1253
Grassland Traditional orchard	1.51	0.1053
<u>Total</u>	<u>1.81</u>	<u>0.4080</u>

The condition assessments were left at default metric conditions.

The post development Hedgerow Units were calculated as follows:

	Units	Length (km)
Non native and ornamental hedgerow	0.09	0.080
<u>Total</u>	<u>0.09</u>	<u>0.080</u>

The condition assessments were left at default metric conditions.

Project Implementation and Construction Plan

It is too early in the process to complete an Implementation Plan. However one will be required that takes the design concepts into a position to be deliverable on the ground.

Specifically, it will include drawings (e.g., detailed landscape planting schedules), management proposals, a construction handover checklist, and a timetable for implementation, and should specify those responsible for activities. The Implementation Plan should be closely aligned with the delivery of the Biodiversity Net Gain and any requirements of the Management and Monitoring Plan.

Biodiversity Net Gain Management and Monitoring Plan

The Biodiversity Net Gain Management and Monitoring Plan will be drafted as part of the proposed project to ensure delivery of long-term management and monitoring of the newly created habitats, typically for years 1 and 5, with specified responsibilities and remedial action.